Management of simultaneous fractures of the acetabulum and pelvic ring: clinical and functional outcomes

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Introduction: Simultaneous fractures to the acetabulum and pelvic ring are rare but represent complex injury patterns. The literature regarding these injures is obscure. We present our treatment protocol and clinical and functional outcomes in a series of patients treated in our institution.

Patient and methods: Between January 2003 and July 2009 all patients with combined pelvic and acetabular fractures were included in this prospectively study. Demographic details, mechanism of injury, ISS, surgical procedures, post-operative course, length of hospital stay, and radiological (Matta's score) and functional outcomes (The Merle d' Aubigne hip score) were recorded. The minimum follow up was 12 months (12-72).

Results: Out of 520 cases of pelvis and acetabulum managed in our unit, 30 (21 males) patients (5.8%) met the inclusion criteria. The mean age was 32 (16-74). 55% sustained lateral compression, 40% combined mechanism and 5% anterior/posterior type of injury pattern. RTA was the most common mechanism of injury (85%). 15 out of the 30 patients had sustained other injuries (mean ISS was 15 (range 9-50)). Initial management was focused on restoration of haemodynamic stability. The mean time from injury to definite reconstruction was 7 days (3-14). Ilioinguinal approach was used in 20 patients, Phannestial in 2 and Kocher langebeck in 4. In 22 cases SI screws were inserted and in 14 cases anterior and posterior column screws. A wheelchair was used initially in 22 cases. The median time to FWB was 3 months. One patient underwent a THR at 18 months. 19 patients scored the full 18 points of the Merle score. Matta radiological score was excellent in 16 patients, Good 11, Fair 2, Poor 1.

Conclusion: The management of these injuries poses many difficulties to the trauma surgeon. With the available expertise in place good outcomes can be obtained as seen in this series of patients.

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Lower limb traumatic amputation – the importance of pelvic binding for associated pelvic fractures in blast injury

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A common injury pattern in current military experience is traumatic lower limb amputations from improvised explosive devices. This injury can coexist with pelvic girdle fractures. Of 50 consecutive patients with traumatic lower limb amputations treated in Camp Bastion Hospital Afghanistan, 12 (24%) had an associated pelvic fracture (eight APC/vertical shear and four acetabular or pubic rami fractures). However if the above knee amputations were bilateral the incidence of associated open book fractures rose to 32% (7/22). The majority of patients (86%) had a pelvic X-ray as part of the primary survey. Of these 52% ($n = 26$) had a Sam sling® in situ but only 11 were deemed appropriately applied. Given the high risk of pelvic fractures in patients with traumatic bilateral above knee amputations, it is imperative that the earliest and proper application of a pelvic binder be initiated.

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Haemorrhage control in emergency pelvic fractures - a survey of surgical capabilities

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Background: In the emergency management of patients with pelvic fractures, there is ongoing debate about the roles of angiography and pre-peritoneal packing. It is agreed that some form of haemorrhage control is required for patients who are haemo-dynamically unstable despite resuscitation. We set out to determine whether on-call general and orthopaedic surgeons would feel able to perform emergency surgical procedures for these patients and whether vascular radiology was available to them.

Methods: Postal surveys were sent to all 219 general and orthopaedic surgeons in Wales. Surveys were anonymous but coded envelopes were used to identify non-responders. The survey was repeated for non-responders 2 months later. Questions included: sub-speciality interest, geographical region, whether there is a pelvic binder in their hospital, availability of interventional radiology, and whether surgeons would perform a range of procedures to control haemorrhage in the emergency setting.

Results: One hundred and thirty eight surgeons (63%) responded to the survey. Only 17% reported that their unit had a formal rota for interventional radiology out of hours. 15% did not know. 95% of orthopaedic surgeons would perform external fixation, although only 48% would use a C-clamp. 88% of general surgeons would be able to pack the pelvis from within the abdominal compartment (i.e. via a laparotomy) and 85% would be prepared to cross-clamp the aorta if the situation required. Despite being recommended by numerous authors in the literature as the best method of haemorrhage control, our survey revealed only 43% would perform extra(pre)-peritoneal packing of the pelvis (54% of general surgeons; 35% of orthopaedic surgeons). Only 12% had received formal training in this procedure, with a further 17% having had informal training.

Conclusions: With an orthopaedic and general surgeon present, it is likely that an on-call team would be able to achieve skeletal stabilisation and explore the abdomen. However, interventional radiology cover is variable and few surgeons in either speciality have received training in pre-peritoneal packing. With appropriately targeted training it is likely that the care of patients with pelvic fractures can be significantly improved.

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Loosening of anterior pelvic metalwork following open reduction and internal fixation of a traumatic pubic diastasis

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Aim: The aim of this study was to measure the number of patients that demonstrated radiographic signs of loosening of internal pelvic metalwork of the anterior pelvic ring during the first post-operative year, and determine whether this has clinical implications.

Methodology: Fifty sequential patients undergoing open reduction and internal fixation of a traumatic pubic diastasis were included in the study. The methods of both anterior and posterior